AMENDMENTS TO THE SPECIFICATION

Please amend the section entitled "Brief Description of the drawings" beginning on page 10, line 1, as follows:

~~Figure 1 (A)~~ Fig. 1A is a schematic view showing a preferred embodiment of a microinjection apparatus;

~~Figure 1 (B)~~ Fig. 1B shows locations of an end wall of a sidewall of capillary and optical fibers;

~~Figure 1 (C)~~ Fig. 1C shows a denatured site formed on a membrane;

~~Figure 2 (A) through (D)~~ Figs. 2A-D show a process of injecting a tip of a capillary into a cell membrane;

~~Figure 3~~ Fig. 3 is a flow chart showing a membrane perforating technique;

~~Figure 4~~ Fig 4 is a schematic view showing another preferred embodiment of a microinjection apparatus;

~~Figure 5 (A) through (D)~~ Figs. 5A-D is a schematic view showing a process of injecting a water-soluble fluorescent dye agent into a cell; and

~~Figure 6~~ Fig. 6 is a graph showing a success rate of injection in which blank: capillary without a titanium oxide film, 120nm: capillary with a 120nm-thick titanium oxide film, 180nm: capillary with a 180nm-thick titanium oxide film, and UV: one minute ultraviolet ray exposure.

Please amend the paragraph beginning on page 10, line 23, as follows:

~~Fig.1 is~~ Figs. 1A-C are a schematic view showing a preferred embodiment of a microinjection apparatus employing the present invention. According to the embodiment, the

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light is selected as the stimulus, and the photosensitizer agent is selected as the membrane-denaturing agent.

Please amend the paragraph beginning on page 10, line 28, as follows:

[[The]] Referring to Figs. 1A-C and 4, the microinjection apparatus includes a capillary 1, a common member, which constitutes a membrane-destroying member, a supporting member for supporting the membrane-denaturing agent, a stimulus-carrying member, and an injection member for injecting a pre-selected substance. A distal end of the capillary 1 is tapering, and an opening diameter of the tip of capillary is several hundreds nanometers. At a proximal end of the capillary 1, optical fibers 4 are provided and opposed to an end wall 3 of a sidewall 2 of the capillary 1. A proximal end of the optical fibers 4 are provided with a light source 5, and the light from which transmits through the optical fibers 4 and is supplied to the end wall 3 of the side wall 2 of the capillary 1 in the direction of the length of the side wall 2 toward the tip of the capillary 1. The light is carried to the tip of the capillary 1 through the sidewall 2 as a light guide.

Please amend the paragraph beginning on page 12, line 1, as follows:

A method of injecting the desired substance into the cell with above-constructed microinjection apparatus will be describe in conjunction with the ~~Figs. 1, 2 & 3. Fig. 2 shows~~ Figs. 1A-C, 2A-D and 3. Figs. 2A-D show the membrane member and only the distal site of the capillary. ~~In the figure,~~ As shown in Figs. 1A-C and 2A-D, reference numeral 10 denotes a cell

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membrane as an example of membrane structure. Fig. 3 is a flow chart showing the microinjection technique. In Fig. 3, the capillary 1 is described as the supporting member.

Please amend the paragraph beginning on page 12, line 9, as follows:

~~During~~ Referring to Figs. 1A-C and 2A, during the injection operation, the capillary 1 is in contact with the cell membrane 10 at a low speed (7 micrometer/sec, for example) so that the tip of the capillary does not perforate the cell membrane 10 physically ~~(Fig. 2 (a))~~. In this state, the injection liquid 8 containing the photosensitizer is ejected onto the cell membrane 10 ~~(Fig.2 (b))~~ (see Fig. 2B). The photosensitizer contacts the cell membrane and then diffuses. Because the activated oxygen can be diffused to a certain distance after generation thereof, the denaturing effect can be obtained even if the membrane is spaced from where the activated oxygen is generated (a few micrometers, for example). Therefore, the photosensitizer, as the membrane denaturing substance, does not necessarily directly contact the membrane. Means for introducing the injection liquid containing the photosensitizer is not limited to the forcible means with pressure means. It may be effected on the cell by the natural diffusion. Also, in place of pressuring, an injection by an electric current such as electroporesis may be used.

Please amend the paragraph beginning on page 12, line 28, as follows:

[[At]] Referring to Figs. 1A-C and 2A-D, at the same time, the light stimulus supplied from the light source 5 is introduced to the side wall 2 of the capillary from the end wall 3 of the side wall 2 of the capillary 1, and then carried to the tip of the capillary 1 though the side wall 2 as a light guide. Then the light is applied from the distal end of the sidewall 2. Only an exposed

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site within the cell membrane 10 that is in contact with the photosensitizer is denatured by the photosensitizer to form a membrane-denatured site 11.

Please amend the paragraph beginning on page 13, line 5, as follows:

~~Because~~ Referring to Figs. 1A-C and 2C, because the membrane-denatured site 11 is deteriorated and its flexibility is reduced, by moving the capillary 1 at a low speed, the tip of the capillary 1 is easily injected into the cell membrane ~~(Fig.2 (C))~~. In this state, the liquid 8 containing the photosensitizer is injected into the cell membrane with the pressure means 9. Then, the tip of the capillary 1 is removed from the cell membrane, and the perforated cell membrane 10 will recover by itself to return the original state (see Fig. 2D).

Please amend the paragraph beginning on page 14, line 9, as follows:

~~Fig. 5 shows~~ Figs. 5A-D show still another embodiment of the present invention. According to this embodiment, photocatalyst is provided on outer surface of the sidewall of the capillary 1 and the photocatalyst is activated by the irradiation. In one preferable example, the photocatalyst is titanium oxide, and the irradiation as the stimulus is selected from the lights having a wavelength activating the titanium oxide. A site to be covered by the photocatalyst is the tip of the capillary, especially a site to be in contact with the membrane. In the figure, an injection liquid 8 containing a water-soluble fluorescent dye (Lucifer Yellow CH 2 milimolar concentration) is injected into a cell of the established neuron-like cell line PC 12. PC12 cells are used as a model of the central nervous system and are ganglia-like cells of Rat adrenal medulla origin. The cell is temporarily oxidized by the photocatalyst to denature the property of the cell,

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and then, it is possible to penetrate the cell membrane 10 by contacting the capillary with the surface of the cell even at a low speed.

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